Recommendation as Instruction Following: A Large Language Model Empowered Recommendation Approach

Abstract

In the past few decades, recommender systems have attracted much attention in both research and industry communities. Existing recommendation models mainly learn the underlying user preference from historical behavior data (typically in the forms of item IDs), and then estimate the user–item matching relationships for recommendations. Inspired by the recent progress on large language models (LLMs), we develop a different recommendation paradigm, considering recommendation as instruction following by LLMs. The key idea is that the needs of a user can be expressed in natural language descriptions (called instructions), so that LLMs can understand and further execute the instruction for fulfilling the recommendation. For this purpose, we instruction tune the 3B Flan-T5-XL, to better adapt LLMs to recommender systems. We first design a general instruction format for describing the preference, intention, and task form of a user in natural language. Then we manually design 39 instruction templates and automatically generate large amounts of user-personalized instruction data with varying types of preferences and intentions. To demonstrate the effectiveness of our approach, we instantiate the instructions into several widely studied recommendation (or search) tasks, and conduct extensive experiments with real-world datasets. Experiment results show that our approach can outperform several competitive baselines, including the powerful GPT-3.5, on these evaluation tasks. Our approach sheds light on developing user-friendly recommender systems, in which users can freely communicate with the system and obtain accurate recommendations via natural language instructions.